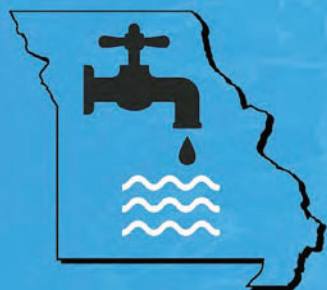


Missouri Department of Natural Resources OPERATOR CERTIFICATION SECTION



WATER & WASTEWATER DIGEST

Spring 2022

Lead and Copper Rule Revision Update

The Environmental Protection Agency (EPA) finalized the Lead and Copper Rule Revision (LCRR) with its publication in the Federal Register on Jan. 15, 2021, with an effective date of March 16, 2021. The EPA delayed the LCRR twice to solicit additional public comment. During these delays, EPA received an additional 50,000 public comments. After review, EPA modified the effective date for the LCRR to Dec. 16, 2021. This article provides an overview of the revisions and additional anticipated changes to the rule.

The LCRR became effective without changes on Dec. 16, 2021, but the following day, EPA published an intent to make major changes to the rule through a new publication in the Federal Register on Dec. 17, 2021. The changes will come from a new rule called the Lead and Copper Rule Improvements (LCRI). EPA plans to propose the LCRI in the summer of 2023 and finalize the rule in the summer of 2024. The LCRI is going to address several aspects of the LCRR that received public comment.

EPA has relayed to states the following possible changes that will be in the LCRI.

Replacement of all Lead Service Lines (LSL). Replacement includes both publicly-owned and privately-owned portions of the service. President Joe Biden has established a timeline to replace all LSLs within the next 10 years. Major sources of funding are becoming available to support this. Current funding sources include the American Rescue Plan Act (ARPA) and the Bipartisan Infrastructure Act. Both of these provide funding for Lead Service Line Inventories (LSLI) and Lead Service Line Replacement Plans, but the Bipartisan Infrastructure Act has funding for Lead Service Line Replacement (LSLR) as well.

Change lead and copper tap sampling criteria. Sample site plans will change from what is currently required in the LCRR. The main change discussed is the fifth liter sample protocol. The change may require collecting a sample of the first liter and fifth liter of water and using the highest lead result from these two samples to calculate the 90th percentile for lead.

Inside This Issue

Lead and Copper Rule Revision Update

Updated Operator Certification Exam Application

New Publications for Drinking Water Bacteriological Sample Siting Plans

How to Use Drinking Water Watch for Sample Schedules

Helpful Hints for Wastewater eDMRs Users

Chemical Sampling Kit Shipments Changing From UPS to FedEx

The Nutrients (and Taste and Odor Complaints) are Coming!

Backflow Prevention Requirements at Community Water Systems

New Email to for Water and Wastewater Systems to Report Cybersecurity Incidents and Resources

Where Life Will Take You...

Check Your Training Hours

Try Out Our New Website to Find Training and Exam Dates

Reduce the complexity of the rule. EPA stated there will be changes to the action level and trigger levels. It is possible that the rule will lower the action level to 10 ug/L for lead and eliminate the trigger level requirements.

Prioritize disadvantaged communities. The rule will prioritize disadvantaged communities concerning all aspects of the LCRR and LCRI, especially for LSLR.

Change the LSLR requirements. It is unclear how the rule will address the replacement of lead service lines. The rule may require the removal of all LSLs. This would encourage full replacement instead of the LCRR requirement that continues to allow partial LSLR. The rule could also include a mandated percentage of LSLR, with higher replacement percentages established for systems that have had an action level exceedance.

EPA stated the only part of the LCRR that will not change is the initial LSLI. Inventories are the primary thing water systems need to be concerned with during the next two years. LSLIs will be due for submittal to the state on or before Oct. 16, 2024. EPA is expected to release LSLI guidance in March or April 2022. Once the guidance is available, the department will be better able to give water systems training on development of LSLI. In the meantime, please start your inventories now!

All community and nontransient noncommunity water system will be required to submit a LSLI. Developing the LSLI will be a long and time-consuming task. The initial inventory should provide a determination for as many service lines as possible, but it is possible to list lines as unknown. Categories for determination are lead, galvanized requiring replacement, not lead and unknown. Water system staff should update the inventory when additional information is available. Each repair and routine maintenance event is a possible opportunity to update the LSLI. Inventories must include the material composition of publicly-owned and privately-owned portions of the service line. Updates are required for submittal to the state according to the lead and copper tap sampling schedule a water system is on. The schedule could be annually or every three years. Updates are not required more frequently than annually.

Water systems can start their inventories by reviewing existing records for service lines. Records that water system personnel can use to indicate lead service lines can include the age of homes constructed in the area, permits, plumbing codes, maps, master plans, meter installations, service connections, distribution system inspections that may indicate materials used in construction of service lines, and others. The utility could consider sending out a survey to all customers to help identify privately-owned service line materials. The water system could provide an incentive for the property owner to complete the survey by providing a certain reduction of cost on a customer's water bill.



Although these methods will help, a visual inspection will often be necessary to make a determination. When planned or unplanned construction activities expose service lines, water system personnel should record materials used at each service, even if the line is not lead. When doing meter reading or meter replacement that allows visual inspection of service lines, personnel should record the materials used. The goal is to have the material composition of every service line identified on both sides of ownership. There should not be any unknown service lines when all evaluations are complete. Documentation of materials used at each service line will provide evidence that can support a water system's certification that there are no lead service lines present. This evidence can also be used when a water system has completed LSLR and can certify there are no longer any lead service lines present.

The department will be providing additional guidance and information from EPA as it becomes available. In addition, the department and other trade organizations will be providing training and presentations at conference events in the near future.

Updated Operator Certification Exam Application

The Missouri Department of Natural Resources recently updated the operator certification exam application available [here](#) or you may find the application online by searching “Missouri operator certification exam application.” The department updated the application to reflect new exam costs for drinking water exams and added the ability for applicants to request information about military benefits in Missouri. The changes also included other minor edits for clarity.

Please begin using the new application immediately and recycle any old versions of the application. The department may return outdated or incomplete applications, which may affect your ability to register for the exam date and location you have selected.

A complete application is required each time an individual applies to take an exam. The department encourages applicants to save a copy of the application for their records and future reference. The work history portion can be very helpful when completing future exam applications and ensuring employment dates and information stay consistent.

If you have any questions, please contact the department’s Operator Certification Section at 573-751-1600.

New Publications for Drinking Water Bacteriological Sample Siting Plans

The Missouri Department of Natural Resources has published two new reference documents for public drinking water systems. The documents break down the complicated topic of bacteriological sample siting plans into clear and readable guidance for both community and noncommunity public water systems.

Public water systems are required to collect routine bacteriological samples from the distribution system according to a written sample siting plan. A properly developed plan guarantees the water system collects samples from representative points throughout the distribution system and reflect the quality of water delivered to consumers.

The guidance documents provide information on how to design a sample siting plan and sample collection schedule that complies with the Revised Total Coliform Rule requirements. Both documents include templates and examples of sample siting plans and sample collection schedules incorporating the requirement to identify routine sites, repeat sites for each routine site, and when applicable, groundwater source sample sites to assist in the development of a plan tailored specifically for each system.

To find the new guidance documents, please visit the department’s [Document Search](#) webpage then search using the keyword “RTCR”. Then select the appropriate guidance publication depending on the type of your water system.

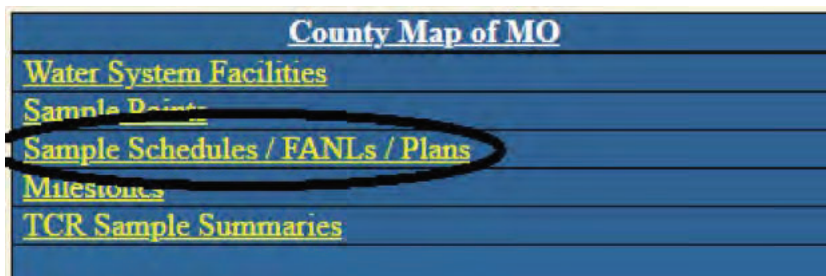
- [Bacteriological Sample Siting Plan Guidance for Community Water Systems – PUB3021](#)
- [Bacteriological Sample Siting Plan Guidance for Noncommunity Water Systems – PUB3022](#)

If you have any questions about the documents or need additional assistance, please contact the department’s Public Drinking Water Branch at 573-751-1077 or your local [Regional Office](#).

How to Use Drinking Water Watch for Sample Schedules

The Missouri Department of Natural Resources provides access to the public to a wide range of information about their local water systems through the [Drinking Water Watch](#) webpage. Drinking Water Watch provides online information to the public about sample results, compliance activities and the water quality produced by public water supplies in Missouri. In addition, water system staff, with a password requested through the department, can use the “User Login” selection to access detailed information for their particular water system(s).

Water systems may often use the site to look up sample results, violation history or other items. A particularly handy feature is the ability to look up when their system is due for its next set of chemical sampling. This can be helpful because different chemical groups such as nitrates or disinfection byproducts, may be on different schedules. To find this information, click the “Sample Schedules/FANLs/Plans” menu item at the top of the water system’s page, and the resulting page displays the year the water system must sample in its current schedule.



Group Non-TCR Sample Schedules			
Recommended Qtr.	Required Frequency	Required Year	Analyte Group
8/1 8/31	1 RT/YR	01-01-2022 12-31-2022	CDB2 - COMPL STAGE 2 DBP
6/1 10/31	10 RT/YR	06-01-2022 10-31-2022	CLCR - COMPL LEAD & COPPER
7/1 7/31	1 RT/3Y	2021	CIOC - COMPLIANCE IOCS
7/1 7/31	1 RT/YR	01-01-2022 12-31-2022	CNO3 - COMPLIANCE NITRATES
3/1 3/31	1 RT/9Y	2027	CRAD - COMPL RADS
1/1 1/31	1 RT/6Y	2025	CSOC - COMPL SOCS ALL
7/1 7/31	1 RT/3Y	2021	CVOC - COMPLIANCE VOCS

To request access to the additional information not available in the public-facing version of Drinking Water Watch, please contact [Thomas Adams](#) with the department’s Public Drinking Water Branch in order to get your own login account to Drinking Water Watch. Once registered, you’ll have access to the sample schedules discussed in this article, as well as special samples that are not for compliance, a full list of system contacts, inspection history and other important information.

Helpful Hints for Wastewater eDMRs Users

The Missouri Department of Natural Resources uses the Missouri Gateway for Environmental Management (MoGEM), an online business portal that allows the regulated community a centralized location to manage eServices for your organization within MoGEM. Though a user account in the MoGEM is a login portal,

wastewater facility staff can submit reports to the department electronically through the various eServices. One of the most used eServices is the Electronic Discharge Monitoring Reports (eDMR) eService.

Did you know...?

In the eDMR application, DMRs are listed by Report Frequency and then by Monitoring Period End Date (MPED). If your facility is required to submit multiple reports for overlapping time periods, the DMRs will first be listed by frequency and then by MPED. In the example below, you can see the software lists the unsubmitted DMRs in order based on frequency: monthly, quarterly and then yearly.

The list is not in order by “Due date.” It’s important to always check the due dates to make sure eDMRs are submitted on time.

If you have questions or need assistance with eDMR, email the [eDMR Helpdesk](#) or call 573-526-2082, or your local [Regional Office](#).



Below is a list of unsubmitted DMRs. Please select Enter Data on the appropriate report to begin entering data.

Report Frequency	Form Type	Status	Monitoring Period Dates	Due Date	
Monthly	Scheduled	Overdue- In Progress	7/1/21 - 7/31/21	8/28/21	View Form
Monthly	Scheduled	Overdue	12/1/21 - 12/31/21	1/28/22	View Form
Monthly	Scheduled	Overdue	1/1/22 - 1/31/22	2/28/22	View Form
Monthly	Scheduled	New	2/1/22 - 2/28/22	3/28/22	View Form
Monthly	Scheduled	New	3/1/22 - 3/31/22	4/28/22	View Form
Quarterly	Scheduled	Overdue- In Progress	10/1/21 - 12/31/21	1/28/22	View Form
Quarterly	Scheduled	New	1/1/22 - 3/31/22	4/28/22	View Form
5 Year	Scheduled	New	9/1/21 - 8/31/26	9/28/26	View Form

Chemical Sampling Kit Shipments Changing From UPS to FedEx

The Missouri Department of Natural Resources’ Environmental Services Program Laboratory (ESP) has begun using FedEx and is no longer using United Parcel Service (UPS) for shipping chemical sampling kits to public water systems. In addition, UPS call tags are no longer used for returning collected chemical samples to ESP for analysis. ESP has begun using FedEx for shipping all chemical sample kits to public water systems. This change impacts all public water systems. Sampling kits that the department mails to water systems contain updated instructions that reflect this change.

The new instructions provide the following options for returning chemical sampling kits to ESP:

1) Health Department Courier (preferred return method for chemical samples)

A majority of water systems already use this courier service to submit monthly bacteriological samples. All county health departments (and some hospitals and clinics) can be used to return most samples overnight to ESP in Jefferson City at no additional cost to the water system. A full listing of [courier locations](#) and contact information can be found online.

Please note that not all hospitals and clinics will accept chemical samples. Each kit will contain a label addressed to ESP to attach to the outside of the box if the PWS is submitting sample(s) using this preferred delivery method.

2) FedEx (backup return method for chemical samples)

Most kits will also contain a FedEx return label and detailed instructions on how to use FedEx for returning sampling kits to ESP for analysis. The new instructions provide information on how to find the nearest [FedEx drop-off location](#), or [scheduling ground pickup](#) either online or by calling 800-463-3339 and saying “Ground Return Pick Up.”

3) Hand-deliver or return sampling kit on your own – PWS always have the option to hand-deliver or return the kit on their own using the enclosed address label in the kit and returning it directly to the ESP at 2710 W Main St. in Jefferson City. If samples are hand-delivered the same day as sample collection, the samples do not need to be pre-chilled. The samples and frozen gel packs can be placed into the cooler/insulated box and returned to the rear loading dock during normal business hours Monday-Friday 8:00am-4:30pm. The person delivering the sample must contact the Sample Custodian at 573-526-3333 prior to delivery and use the loading dock phone upon arrival to contact the Sample Custodian.

Operators are encouraged to return samples using the Health Department Courier. This option allows samples to be delivered overnight to Jefferson City at the lowest available cost using a courier company. The monitoring schedules of most chemical samples is such that a kit received by a PWS can be held for one or two weeks before sample collection and refrigerated overnight to correspond with the timing in collection and returning a monthly bacteriological sample during the same day trip to the Health Department Courier. This method of returning all chemical samples will work with the exception of radionuclides (RAD) samples that must be returned to the St. Louis County Health Department via their issued UPS call tag. If you have any questions, please contact the Public Drinking Water Branch at 573-751-1077 for more information.

The Nutrients (and Taste and Odor Complaints) are Coming!

If you operate a public water system that relies on streams or reservoirs, you know that spring is a dynamic time for water quality conditions across Missouri. Powerful storms and high winds are already marching across Missouri, stirring up everything in their path and performing nature’s version of a spring clean. All of that dust (some imported from Oklahoma and Kansas through strong winter storms), pollen and other debris that settled over the landscape is now hitching rides to a stream or reservoir near you. Along the way, runoff is also offering free rides for recently applied fertilizers full of essential nutrients such as nitrogen and phosphorus. While these nutrients are essential for growing robust crops that feed the nation and the world, they are also essential for feeding the algal (cyanobacterial) blooms that muck up water chemistry and quality in drinking water reservoirs.

If you operate a surface water-based system, particularly a reservoir, you know it is just a matter of time before you start hearing about taste and odor issues from your consumers. With an apparent uptick in the prevalence of harmful algal blooms (those with potential to produce toxins) in recent years, more and more people are becoming aware of the far more serious problems that can arise from cyanobacteria in drinking water reservoirs. For many consumers,



detecting a hint of geosmin (an earthy, musty taste or odor) in their tap water now generates more than just annoyance – they may be concerned about their health or that of friends and family in the community (regardless of whether a particular bloom produces toxins).

Engineered solutions to algal bloom-related water quality issues at a treatment plant or directly to a reservoir can be effective in managing water quality problems, but these solutions are often costly (whether a major one-time upgrade to a treatment plant or smaller, but repeated, applications of chemicals or other treatment techniques). While these treatments may need to be a part of the system's routine treatment process moving forward, they do absolutely nothing to reduce the flow of excess nutrients into streams and reservoirs.

Are public water systems helpless in reducing the flow of nutrients into their reservoirs? The answer, of course, is 'no.'

The Missouri Department of Natural Resources' Soil and Water Conservation Program operates in every county in Missouri, and can offer agricultural producers incentives to install best practices in sensitive areas to help control nutrient run-off. Additionally, in response to language in the federal 2018 Farm Bill, the United States Department of Agriculture's Natural Resource Conservation Service (UDA-NRCS) is offering enhanced incentives to install best practices in their recently established 'source water protection priority watersheds.' These watersheds comprise 20% of land across Missouri and may include areas that drain to your source stream or reservoir – enhanced incentives of up to 90% federal/10% local are available to producers in these areas. Start talking to your local conservationists today to learn more or reach out to your county soil and water district office or local NRCS district office to see if this opportunity may help your community. You can also reach out to the Missouri Source Water Protection Program for additional information on these programs or for other opportunities to increase protection of your local drinking water source.

Backflow Prevention Requirements at Community Water Systems

Backflow is the undesirable reversal of flow in a potable water distribution system through a cross-connection, which is an actual or potential link connecting a source of pollution or contamination with a potable water supply. Backflow prevention protects public water systems from contamination or damage through cross-connections located in customer facilities. This is typically achieved by placing a backflow prevention assembly between the customer and public water system.

The State of Missouri's backflow regulations, 10 CSR 60-11, apply to all community public water systems. Customers of community water systems who are required to have a backflow prevention assembly in place must have these prevention assemblies inspected and tested on an annual basis by a backflow prevention assembly tester certified by the Missouri Department of Natural Resources. The individual performing the test should furnish the test results to both the customer and the public water system. In turn, the system should retain these records for five years. The water system should track the date when the customer initially installed the device, past inspection dates and when upcoming annual inspections are due. If the system does not receive an annual inspection report within 60 days of the anniversary date, the water system is responsible for following up and notifying the customer of the need to have their assembly tested.

There may be times; however, when a customer is unresponsive. In these situations, and at the request of the water system, the department can assist with educating unresponsive customers about what the water system needs with regard to backflow prevention and bring awareness to its importance. If you have any questions, please contact [Ryan Ruegg](#) with the department's Public Drinking Water Branch, Infrastructure Permits and Engineering Section at 573-526-7052.

New Email to for Water and Wastewater Systems to Report Cybersecurity Incidents and Resources

The Missouri Department of Natural Resources has set up a dedicated [email address](#) and would like you to report all cybersecurity incidents at water and wastewater facilities.

The new address is wpp-cybersecurity@dnr.mo.gov.

Please email this address from a noncompromised email account as soon as possible after an incident is discovered and include the relevant details.

The department encourages water and wastewater system owners and operators to be aware of cybersecurity threats and take steps to mitigate them. The most common threat is posed by current and former employees and contractors who may accidentally or intentionally disrupt normal operations. For more information, please see the resources below.

Assessment Resources:

The U.S. Cybersecurity and Infrastructure Security Agency (CISA) offers several free scanning and testing services to help utilities reduce their exposure to threats by taking a proactive approach.

More information can be found at the [Cybersecurity and Infrastructure Security Agency](#)'s website.

The U.S. Environmental Protection Agency (EPA) offers free, confidential cybersecurity assessments and technical assistance to drinking water and wastewater utilities through the Horsley Witten Group, Inc.

More information: [Cybersecurity Training](#)

Registration: [Cybersecurity Assessment and Technical Assistance for Water and Wastewater Utilities](#)

Agency and Association cybersecurity links:

[EPA](#)

[CISA](#)

[NRWA](#)

[WaterISAC](#)

Where Life Will Take You...

It's hard to believe that I started my 15th year with the Department of Natural Resources at the end of October 2021. The time has gone by so quickly that it seems like only a few days ago I was finishing up my degree at SEMO, commuting daily from Poplar Bluff to Cape Girardeau. Back then, like most other soon-to-be college graduates, I was beginning to second guess my choice of careers.

About two months before graduation, I received a tip from a high school classmate that the local water district that served our area had an opening for a water operator position. If I remember correctly, the hourly wage was about \$7.50, a veritable fortune for me at the time!

Needless to say, that unexpected job offer eventually turned into my life's career, providing me with experiences and skill sets that would later provide for even greater responsibility and opportunities.

I started with Butler County PWSD #3 in October 1995. Dale Pry, superintendent of the district, was a great mentor and teacher, as he was looking toward retirement in six years and was eager to train me as his eventual replacement. During my 12 years with the district, I was able to learn many skills that would later serve me at

the department. Water treatment plant and distribution system operation, water system repairs and main line/service installations, board meeting moderation, budget preparation, supervising employees, water quality testing, working with engineers and countless other duties too numerous to mention.

Though I worked with great people and had a cooperative and supportive district board, eventually the ever-increasing responsibility of superintendent and being on call 24/7/365 began to wear me down, especially with a growing family. One morning, after a particularly nasty water main break the night before...in a muddy cattle lot...in the blowing rain and lightning of a thunderstorm...I was rethinking my future! While brooding at my office desk, I noticed that the copy of the Water & Wastewater Digest from Operator Certification had a job opening at the Department of Natural Resources in Poplar Bluff.

Seizing that opportunity, I started with the department in October 2007. During my time here, I have held four different positions, and am currently the Environmental Supervisor of the Drinking Water Unit for the Southeast Region. Though I am happy in my current position, perhaps the most fulfilling job I have done here at the department was the Water Specialist position, which I held for six years.



As Water Specialist, I was able to use my experiences at the district, both good and bad, to train other operators to meet the needs of Missourians for clean and safe drinking water. I learned to be responsible for preparing my own training material, scheduling classes, conducting technical and compliance assistance, and thankfully, overcoming my fear of public speaking. Best of all, I was able to interact with my peers, teaching and learning as I went, while developing relationships and trust that have benefitted both the state and me.

Are you an A or B-level certified drinking water or wastewater treatment operator, looking for a change? Do you want to pass along your knowledge and experiences to others, while building strong and lasting relationships? If so, consider employment opportunities with the

Department of Natural Resources by visiting the [Mocareers website](#) and search for Water Specialist positions or reach out to the Operator Certification Section at 573-751-1600 to ask about current opportunities.

I hope you will take the time to consider your future, and be open to new opportunities because, as I found out over 26 years ago, you never know where life will take you...

[Jason Kirkman](#)

Environmental Supervisor

Missouri Department of Natural Resources

Southeast Regional Office.

Check Your Training Hours

Certified operators are encouraged to access training reports by visiting the department's [Operator Certification database](#). To log in, the password is the last four digits of your social security number.

You can check training hours, renew certificates online, view and update contact information for public drinking water systems, including the chief operator, sample collector and administrative contact.

For more information, contact the department's Operator Certification Section at 800-361-4827 or 573-751-1600.

Try Out Our New Website to Find Training and Exam Dates

The Missouri Department of Natural Resources has redesigned and reorganized its website to improve the customer experience and allow users to find the information they need easier and faster. The department's new [website address](#) has not changed.

Aside from a completely new look, users will notice the website content has been reorganized based on areas of focus, such as air, waste and recycling, water, energy, state parks and general topics. The department's Operator Certification page features a new format for viewing upcoming training and allows operators to search for courses by date and location. To find the [Operator Certification page](#), select the Water tab from the department's main page to find a list of upcoming training and exam dates.



Follow us on Twitter
@MoDNR!